Amendment

IN THE CLAIMS

Please amend claim 1 to read as follows:

--1. (Three times amended) A method for detecting the presence or absence of breast cancer in a non-lactating subject, comprising determining whether or not mammary gland sodium/iodide symporter (mgNIS) is expressed in breast tissue of the subject using an agent that binds to mgNIS, wherein

binding of the agent in the breast tissue is indicative of expression of mgNIS in the breast tissue and

expression of mgNIS in the breast tissue is indicative of the presence of breast cancer in the subject, and no expression of mgNIS in the breast tissue is indicative of the absence of breast cancer in the subject.--

Remarks

After entry of the amendment filed on April 12, 2002, claims 1, 2, 4-9 and 29 are pending in this case. Claim 1 is further amended to more particularly point out and distinctly claim the invention. Specifically, claim 1 is amended to eliminate the limitation "specifically and selectively", and to add a phrase that recites that binding of the agent is indicative that mgNIS is expressed in breast tissue. Although applicants believe that the skilled artisan would understand, without addition of that phrase, that binding of the agent is indicative that mgNIS is expressed, the added phrase eliminates any possible ambiguity in that regard. Applicants also believe that the addition of that phrase would resolve a possible rejection under 35 U.S.C. 112, second paragraph as discussed on page 6 of the Advisory Action of June 4, 2002, since the added phrase further makes claim 1 recite a positive process step that clearly relates back to the preamble.

Applicants appreciate the extensive discussion in the Advisory Action of June 4, 2002 regarding the proposed (unentered) amended claims. Applicants recognize that, since the amendment was not entered, the Examiner needn't have provided any discussion about the proposed amendments, and Examiner Rawlings comments are appreciated as moving the case forward.

Applicants note that the phrase "specifically and selectively" has been eliminated from claim 1, and that "binds to mgNIS" finds support in the specification at least at page 9, lines 19-20. The amendment should thus eliminate any concern for new matter raised in the Advisory Action at page 5.

Regarding the discussion in the Advisory Action about the prior art, applicants disagree with the characterization of the prior art as asserted to make the claims anticipated or obvious. Applicants note that the combination of references do not teach or suggest every limitation of the claims, since none of the references cited teach or suggest that accumulation of ^{99m}Tc-pertechnetate could be used in a method for detecting the presence or absence of breast cancer, but at most suggest that the method could be used in confirmation of a diagnosis of breast cancer. Since none of the references teach or suggest this important limitation of the claims, applicants believe that the obviousness and anticipation rejections cannot stand. See, e.g., *In re Vaeck*, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991); Applicants also note the following quote from MPEP 2142:

> "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations."

Here, applicants assert that all of the claim limitations are not taught or suggested in the prior art, since there is no suggestion in any of the cited references that accumulation of radioactivity could be used in a method to <u>detect</u> breast cancer. The

Advisory Action, and previous Office Actions appear to indicate that the method of detecting breast cancer, although not taught or suggested in the prior art, would be understood based on the combination of references. However, the above quote make clear that, to sustain an obviousness rejection, each limitation must be taught or suggested, not merely understood. Since no reference teaches the limitation that the claimed method can be used for detecting breast cancer, applicants believe that the obviousness rejections cannot stand.

In any case, claims 5-9 and 29 recite further limitations that require the specific knowledge that mgNIS is responsible for the accumulation of ^{99m}Tc-pertechnetate, used in the recited prior art. Since that specific knowledge is only available from the teachings of the instant application, applicants assert that those claims could not be anticipated or made obvious from the prior art. Applicants thus assert that claims 5-9 and 29 are allowable even if the obviousness and anticipation rejections are maintained.

In light of the claim amendment and the above discussion, applicants respectfully request reconsideration and withdrawal of all rejections and passage of the claims to allowance. Should there remain any minor issues preventing allowance of any or all of the claims, applicants request that the Examiner contact the undersigned attorney.

Respectfully submitted,

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Dated: New York, New York
July 10, 2002

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Marked-Up Claims as Amended in Reply of July 10, 2002
U.S. Patent Application No. 09/519,959
Additions are underlined and deletions are bracketed

1. (Three times amended) A method for detecting the presence or absence of breast cancer in a non-lactating subject, comprising determining whether or not mammary gland sodium/iodide symporter (mgNIS) is expressed in breast tissue of the subject using an agent that [specifically and selectively] binds to mgNIS, wherein

binding of the agent in the breast tissue is indicative of expression of mgNIS in the breast tissue and

expression of mgNIS in the breast tissue is indicative of the presence of breast cancer in the subject, and no expression of mgNIS in the breast tissue is indicative of the absence of breast cancer in the subject.

2. The method of Claim 1, wherein the expression of mgNIS is detected *in vitro* or *in vivo*.

4. The method of Claim 3, wherein the agent is labeled with a detectable marker.

5. The method of Claim 3, wherein the agent is an antibody.

6. The method of Claim 5, wherein the antibody is labeled with a detectable marker.

7. The method of claim 1, wherein the expression of mgNIS is detected using at least one nucleic acid probe[that specifically and selectively hybridizes to nucleic acid encoding mgNIS].

8. The method of claim 7, wherein the nucleic acid probe is DNA[or RNA].

9. The method of Claim 7, wherein the nucleic acid probe is labeled with a detectable marker.

29. The method of claim 7, wherein the nucleic acid probe is RNA.